

AA0108707

UR 0482

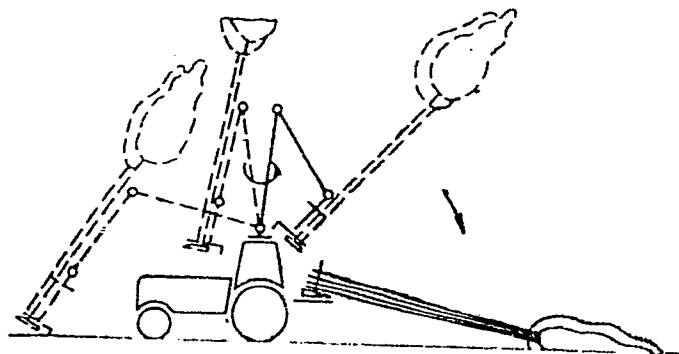
Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

228366 FELLING OF TREES by a gripping and
cutting device which is fixed on a beam
of a vehicle. The felling is done by bending
the tree to the side of cutting. In order to
enable the use of the full load-lifting capacity
of the vehicle, and to lift trees which weigh
more than the vehicle's load-lifting capacity,
the cut trees are accumulated in the gripping
and cutting device in a volume which is equal
or somewhat more than the vehicle's load-lifting
capacity. Then the trees are bent towards the
vehicle, without lifting them, displacing the
center of gravity of the trees to a position in
which the overturning movement becomes less than
its critical value. 3.2.67. as 1131518/29-33.
V.L. BOZHAK et alia. Central Forestry Mechanisation
Inst. (2.6.69.) Bul.31/3.10.68. Class 45f.
Int.Cl.A01g.

18

19900465

AAO 108707



4/3

19900466

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AA0108707

AUTHORS: Bozhak, V. L.; Iyevin', I. K.; Vakhneyev, B. A.;
Kushlyayev, V. F.; Lazdan, V. S.; Uland, Ya. Ya.

Tsentral'nyy Nauchno-Issledovatel'skiy i Proyektno-Konstruktorskiy
Institut Mekhanizatsii i Energetiki Lesnoy-Promyshlennosti i
Latviyskiy Nauchno-Issledovatel'skiy Institut Lesokhozyastvennykh
Problem.

3/3
19900467

USSR

BOZHANOV, E. S., LETSKIY, E. K.

"Application of the Method of Stochastic Approximation for Processing of Large Files of Information"

Izbr. Tr. Vses. Mezhvuz. Simpoz. po Prikl. Mat. i Kibernet, Gor'kiy, 1967 [Selected Works of All-Union Interdepartmental Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967], Moscow, Nauka Press, 1973, pp 143-146 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V236, by the authors).

Translation: The problem is studied of constructing an approximating polynomial of power n with respect to N realizations of the function $y(x_1, x_2, \dots, x_k)$. The use of a computer algorithm from the method of least squares to estimate the coefficients of the approximating function requires on the order of n^3 calculations. It is demonstrated that when the problem is solved using a sequential computation procedure and the required accuracy of solution is limited, the number of computations required is on the order of $n^{5/2}$.

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BOZHENKO, G. I.

Telephone Systems

SECRET
21.5.1978

NEW TELEPHONE HOOPING SYSTEM DEVELOPED BY G. I. BOZHENKO, "MULTIPLYER" 1964
 AND HOOPING EQUIPMENT FOR INCLUSION OF THE HOOPING OF DIRECT SUBSCRIBERS
 TO MULTIPLEX CHANNELS. "LINE" Moscow, "VOENNA SVYAZ" Magazine, No 5,
 August 1977, pp 29-31.

In rural telephone networks it is frequently necessary to connect the telephone of direct subscribers to the central automatic telephone exchange through multiplexed subscriber lines. Inasmuch as the number of telephone of direct subscribers is limited, limited channel multiplexing apparatus for two to six channels is used for the hookup. In order to coordinate the telephone with multiplexing apparatus various connector relays are worked out independently which do not always meet all the requirements with regard to the transmission of interconnection signals. In order to achieve the use of a standardized circuit of connector relays in rural networks for the hookup of telephones to the channels formed by multiplexing apparatus with a differentiated signal channel, the LOMIS (Central Branch of the Central Scientific Research Communications Institute) of the USSR Ministry of Communications worked out a simplified RSC (multiplex trunk line relay) circuit which meets the basic requirements for the transmission of interconnection signals.

Connections for the Village

When telephones are connected to automatic telephone exchanges through multiplexing equipment channels it is necessary to remember that attenuation in this case forms out of residual attenuation of the multiplexing equipment, channel and attenuation of the subscriber's line. In most cases the subscriber's line is hooked up to the central automatic telephone exchange (central exchange) through a channel of the multiplexing equipment. Then overall attenuation in the sector between the

to be used in the same manner as in the case of the other (the other section).

Modulation from the relay complex are intended in channels (1) and (2) to be used in the same manner as in the case of the other (the other section).

The telephone is connected to the high frequency channel through the switching circuit of the multiplex trunk line relay (MTR-1) in one of the other side of the high-frequency channel in connection through the switching circuit of the multiplex trunk line relay (MTR-1) to the switching circuit of the (MTR) or to the preselector of the automatic telephone exchange (MTR-1).

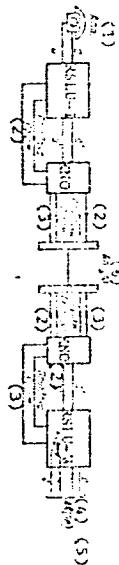


Figure 1

- Key:
- 1. Telephone
 - 2. Transmission
 - 3. Reception
 - 4. Subcarrier's act
 - 5. Preselector
 - 6. Multiplexer

Fig. 2 shows a diagram of the relay complex where: VA -- is the busy relay used during establishment of incoming communication and preselector relay used during the establishment of outgoing communication; B -- clearing relay; C -- series relay; D -- relay for reception of signals from the channel; A -- power signal, and two relay operating from pulses produced by dialing of the number, in addition to which it takes part in the transmission of signals into the channel.

Fig. 3 shows a diagram of the relay complex where: I -- is the relay for reception of signals from the channel; P -- is the clearing relay; S -- is the series relay; K1, K2 -- is the dialing pulse corrector relay; VR -- is the dialing relay. Principal data of the indicated relays are summarized in the table.

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--METASTABILITY OF CALCIUM SILICATE HYDRATES DURING INCREASE OF THE
AUTOCLAVE TEMPERATURE -U-
AUTHOR-(03)-BOZHENDV, P.I., KAVALEROVA, V.I., GRIGORYEV, B.A.
COUNTRY OF INFO--USSR
SOURCE--STROIT. MATER. 1970, (5), 31-2
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, CHEMISTRY
TOPIC TAGS--MINERAL FORMATION ANALYSIS, SILICATE MINERAL, CALCIUM MINERAL,
AMORPHOUS SILICON, QUARTZ, CALCIUM OXIDE, CRYSTAL HYDRATE, X RAY
DIFFRACTION PATTERN, THERMAL ANALYSIS, TEMPERATURE DEPENDENCE,
METASTABLE STATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1282 STEP NO--UR/0228/70/000/005/0031/0032
CIRC ACCESSION NO--AP0136688
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136688

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CA SILICATE HYDRATES WERE PREPD. BY MIXING CAO WITH AMORPHOUS SILICA OR FINELY GROUND QUARTZ IN THE MOL. RATIO OF 1:1 AND PRESSING SMALL CUBES (EDGE LENGTH 1.4 CM) FROM THE MIXT. THE CUBES WERE AUTOCLAVE CURED AT TEMPS. 448-637DEGREESK, APPLYING A HIGH HEATING RATE. AFTER CURING THE SAMPLES WERE QUENCHED, AND THEIR STRENGTH AND MINERAL. COMPN. (BY X RAY DIFFRACTION AND DTA) DETD. THE SEQUENCE OF MINERAL FORMATION IN SAMPLES MADE WITH AMORPHOUS SILICA; BELOW 498DEGREESK 1.25CAO.-SIO SUB2.H SUB2 O (I) AND 2 CAO.SIO SUB2.NH SUB2 O (II) ARE FORMED. AT 498-583DEGREESK, I IS TRANSFORMED INTO 0.8CAO.SIO SUB2.NH SUB2 O (III) AND CAO.SIO SUB2.O.18H SUB2 O (XONOTLITE), AND II INTO C TYPE 2CAO.SIO SUB2.-H SUB2 O. BETWEEN 537 AND 583DEGREESK III IS TRANSFORMED INTO XONOTLITE, ALSO. AT STILL HIGHER TEMPS. SOME X RAY DIFFRACTION PEAKS OF GYROLITE OCCUR, BUT GYROLITE WAS NOT DETECTED BY DTA. IN QUARTZ BEARING SAMPLES THE FORMATION SEQUENCE IS SIMILAR, BUT THE AMT. OF COMPS. FORMED IS LOWER (CONSEQUENTLY THE AMTS. OF UNCOMBINED LIME AND SILICA HIGHER) AND THE TRANSFORMATIONS TAKE PLACE AT HIGHER TEMPS. AT TOP TEMPS. THE FORMATION OF AN UNIDENTIFIED LOW LIME COMPD. WAS OBSD. IN THIS CASE; ITS VERY INTENSIVE X RAY PEAK OCCURS AT 3.01ANGSTROM. THE STRENGTHS OF SAMPLES MADE OF QUARTZ BEARING BATCHES IS ALWAYS HIGHER THAN THOSE MADE WITH AMORPHOUS SILICA.

UNCLASSIFIED

USSR

UDC: 661.143

~~BOZHEVOL'NOV, V. Ye., PRISELKOVA, K. D., SOLOV'YEV, B. N.,
ZARUBIN, O. V., KARELIN, V. V.~~

"Preparation of Continuous-Action Brightness Standards"

Sb. Nauch. tr. VNII lyuminoforov i osobo chist. veshchestv
(Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Substances),
1971, vyp. 6, pp 95-98 (from RZh-Khimiya, No 15, Aug 72,
Abstract No 15L187)

Translation: New methods are proposed for making phosphor brightness standards for the green, blue and orange regions of the spectrum in the form of polymer discs and flexible screens. These methods are simpler and more reliable than conventional methods, and are suitable for all grades of phosphors. Standards based on C^{14} are exceptionally stable (25% brightness fall-off in three years), and also are distinguished by high brightness, mechanical strength, and will withstand being kept for several days in a ferrous sulfate dosimetric solution without losing brightness. Standards made with tritium are safe from the dosimetric standpoint and have high mechanical strength and constant brightness yield (drop in brightness only 3-4% in one year).

1/1

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1/2 019 UNCLASSIFIED
TITLE--KINETIC DETERMINATION OF COPPER -U-

PROCESSING DATE--16OCT70

AUTHOR--(05)-KREINGOLD, S.U., BOZHEVOLNOV, YE.A., ANTONOV, V.N.,
PANTELEIMONOVA, A.A., SOSENKOVA, L.F.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,952

REFERENCE--OTKRY, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(4) 95
DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--COPPER, CHEMICAL PATENT, OXIDATION, HYDROGEN PEROXIDE,
FLUORIDE, CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1994

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0115793

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0115793

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COPPER WAS DETD. KINETICALLY BY
THE OXIDN. OF AMIDOL BY H SUB2 O SUB2 IN A FLUORIDE BUFFER SOLN. AT PH
2.5-4.5.

UNCLASSIFIED

USSR

UDC: 661.143.099

TVERDOKHLEV, I. G., BUTSLOV, M. M., MIKHALEV, A. A., BOZHI-BAYLOVA, G. N.

"Pressing Phosphors as a Method of Making X-Ray Phosphor Screens"

Sb. nauch. tr. VNII lyuminoformov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Substances), 1971, vyp. 6, pp 71-81 (from RZh-Khimiya, No 15, Aug 72, Abstract No 15L188)

Translation: The paper demonstrates the feasibility of improving the characteristics of x-ray phosphor screens through an increase in the packing density of phosphor grains by the method of pressing followed by high-temperature treatment to restore the intensity of x-ray luminescence (sulfide and rare earth phosphors) or without heating (tungstates, sulfates). Bibliography of five titles.

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USSR

UDC 612.821.2.014.46:615.357.452

BARU, A. M., and BOZHKO, E. Kh., Laboratory of Biochemistry, Khar'kov Scientific Research Institute of Neurology and Psychiatry

"Effect of Some Inhibitors and Metabolites of Catecholamine Metabolism on the Processes of Fixation and Reproduction of Memory Traces

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 9, Sep 70, pp 45-48

Abstract: The formation and reproduction of a conditioned-defense avoidance reaction was studied in white Wistar rats after administration of substances affecting catecholamine metabolism. It was found that teturam (disulfiram) inhibits the synthesis of norepinephrine and sharply depresses the reproduction of a steadily evolved avoidance response; this effect may be prevented by preliminary introduction of monoamine oxidase inhibitor (iprazid). It was found that some animals exhibited an inability to learn and that iprazid was conducive to reinforcement of the conditioned defense avoidance reaction. Chronic introduction of 3,4-dimethoxyphenylethylamine impeded the formation of the response, while single injections resulted in inhibition of preliminary evolved reactions. The possible role of catecholamines in the processes of formation and reproduction of "memory traces" is discussed.

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USSR

UDC 619:616.981.42+616.982.2:616.44

BOZHKO, G. K., Candidate of Veterinary Sciences, Main Veterinary Administration, Ministry of Agriculture UkSSR, and KRIKUNOV, A. A., Voronezhskaya Oblast Veterinary Department

"Experience in Controlling Brucellosis and Tuberculosis"

Moscow, Veterinariya, No 10, 1971, pp 53-59

Abstract: During the first few years after World War II brucellosis was reported in all the oblasts and every other farm in the Ukraine. Today the republic is on the way to being completely brucellosis-free, with plans calling for total eradication of the disease in 1972. This situation was brought about by persistent use of one or more of the following methods: (a) systematic search for and slaughter of diseased animals; (b) prophylactic vaccination of young animals; (c) replacement of young animals with other from healthy farms; and (d) replacement of the entire diseased herd with healthy animals from disease-free farms. Brucellosis was rampant in Voronezhskaya Oblast in the late 1940's but reduced to isolated cases by 1971, mainly by vaccination. Tuberculosis was brought under control in the oblast by widespread use of the tuberculin test and destroying all the diseased animals detected.

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Veterinary Medicine

USSR UDC 619:616.9-022.6 +636.1 +636.2 +636.4 +636.52/.58

BOZHKO, G. K.

"Epizootiology of Foot-and-Mouth Disease"

Visnik silskogospod. nauki (Journal of Agricultural Science / Ukrainian /), No 10, 1970, pp 98-100 (from RZh-58. Zhivotnovodstvo i Veterinariya, No 4, Apr 71, Abstract No 4.58.575)

Translation: Clinical observation of the course of foot-and-mouth disease produced by A22 virus indicates that the disease in the last stage is not characterized by dissemination, and that it proceeds in a mild form not only among immunized animals but also among nonimmunized livestock. This is explained by a change in virulence and communicability of foot-and-mouth disease virus. In animals convalescing from foot-and-mouth disease, sufficient immunity is maintained for no less than four years (the observation period). Comparison of diseased animals with animals which had the disease four years ago showed no clinical signs of the disease in convalescents. Several series of

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USSR

BOZHKO, G. K., Visnik silskogospod. nauki, No 10, 1970, pp 98-100

aluminum hydroxide formol vaccine with saponin from lapinized foot-and-mouth disease virus type A22 were insufficiently effective -- the disease incidence among young animals rose for various periods (38-78 days) after vaccination.

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USSR

UDC 612.82.015.348-06:612.118.24:616.895.8

US, Z. G., and BOZHKO, G. ~~KH.~~, Kharkov Scientific Research Institute of Neurology and Psychiatry

"Effect of Blood Serum From Schizophrenics on the Renewal of Brain Proteins in Rats"

Moscow, Zhurnal Nevropatologii i Psikhiatrii, No 2, 1971, pp 253-255

Translation: Summary: The authors studied the effect of blood serum from schizophrenics with a continuous (six persons) or remittent (24 persons) course of the disease on the renewal of proteins in the cortex, hypothalamus, cerebellum, and medulla oblongata of white rats. The incorporation of radioactive methionine into the brain proteins was an indicator of this process. Serum from patients in an active stage of the disease was found to lower the level of protein metabolism in the cerebellum, hypothalamus, and cerebral hemispheres of the animals. Serum from patients in dissociated remissions (after A. I. Ploticher) had the same effect. However, serum from patients in associated remissions had no perceptible effect on protein renewal in the areas of the rat brain under study.

It is generally known that serum from schizophrenics, unlike that from healthy persons can markedly alter cell metabolism. This fact is of
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USSR

US, Z. G., and BOZHKO, G. KH., Zhurnal Nevropatologii i Psikhatrii, No 2, 1971, pp 253-255

unquestioned value in elucidating some aspects of the pathogenesis of schizophrenia.

Our purpose was to compare changes in the rate of protein renewal in the rat brain after treatment with serum from schizophrenics in the acute phase of the disease and in remissions.

Blood was taken from 30 schizophrenics and 12 apparently healthy persons. Six of the former had the continuous form of the disease, while 24 had the remittent form. Twelve of those with the remittent type were examined during an exacerbation and 12 during a remission. Attention was focused on the quality of the remissions, which were assessed according to A. I. Ploticher's classification. Patients in associated (six persons) and dissociated (six persons) remissions were distinguished accordingly.

The rats were injected with the serum intraperitoneally at the rate of 6 ml/kg daily for 3 days. The main group consisted of 42 animals. Eight intact rats served as controls. The effect of the serum was judged from the incorporation of methionine into brain proteins. Radioactive methionine was injected subcutaneously (0.5 microcurie per kg of body weight) simultaneously with serum on day 3, 24 hours before the animals were sacrificed. The incor-
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USSR

US, Z. G., and BOZHKO, G. KH., Zhurnal Nevropatologii i Psikhiiatrii, No 2, 1971, pp 253-255

poration of methionine into proteins of the hemispheres, cerebellum, medulla oblongata, and hypothalamus was investigated. Radioactivity was expressed in counts per minute per mg of tissue weight. The ratio of the number of counts in the proteins to the radioactivity of methionine not incorporated into proteins served as an indicator of the intensity of protein renewal. The resulting data were statistically processed by the Student-Fisher method.

In the intact animals, the level of methionine incorporation was highest in the hemispheres and cerebellum. Medulla proteins were much less active ($P < 0.01$). This finding is consistent with the literature data which show that protein metabolism is more intense in portions of the brain that have a greater functional load. Methionine incorporation into proteins was also higher in the hypothalamus than in the medulla ($P < 0.05$).

After injection of serum from healthy persons, the activity of proteins in all the portions of the brain studied was virtually indistinguishable (i.e., with respect to the amount of the radioactive label incorporated) from that of the proteins in the corresponding portions of the brain in the intact animals.

After injection of serum from schizophrenics with a remittent course

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USSR

US, Z. G., and BOZHKO, G. KH., Zhurnal Nevropatologii i Psikhatrii, No 2, 1971, pp 253-255

in the acute period of the disease, the activity of the hemispheres, cerebellum, and hypothalamus was appreciably less than in the control ($P < 0.05$). The extent of the decrease in these structures was approximately the same (67 to 69%). The activity of proteins in the medulla oblongata, unlike the other regions investigated, was unchanged ($P > 0.3$).

After injection of serum from schizophrenics with a continuous course, incorporation of the labeled precursors into proteins of the hemispheres, cerebellum, and hypothalamus likewise decreased ($P < 0.05$). However, this decrease was sharper in the hemispheres and hypothalamus (47 and 30%, respectively). On the other hand, the activity of proteins in the medulla oblongata remained as before ($P < 0.2$).

Our findings show that serum from schizophrenics in the active stage of the disease can slow the renewal of proteins in the rat cerebellum, hypothalamus, and hemispheres.

Incorporation of the radioactive label into proteins of the hemispheres, cerebellum, and hypothalamus after treatment with serum from schizophrenics in dissociated remission was distinctly less than in the control ($P < 0.05$), and it scarcely differed from that observed after injection of serum from schizo-

4/5

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USSR

US, Z. G., and BOZHKO, G. KH., Zhurnal Nevropatologii i Psikhiatrii, No 2, 1971, pp 253-255

phrenics with the remittent course in the acute stage of the disease ($P < 0.4$). After injection of serum from schizophrenics in associated remission, the amount of methionine incorporated into the proteins was the same as in the control. The deviations were not statistically significant ($P > 0.4$). These findings show that serum from schizophrenics in dissociated remission differs from serum from schizophrenics in associated remission. These characteristics were discovered from the effect of the serum on protein metabolism in the rat brain.

Thus, serum from schizophrenics with a remittent course in the acute stage of the disease and serum from those with a continuous course lower the level of protein metabolism in the cerebellum, hypothalamus, and hemispheres of rats. Serum from schizophrenics in dissociated remission has the same property.

After injection of serum from schizophrenics in associated remission, the process of protein renewal in the brain areas studied remained unchanged.

5/5

USSR

UDC 615.322:633.75:547.943).012.8

MUSHINSKAYA, S. KH., SHOSTENKO, YU. V., VYSOTSKAYA, YE. S., and BOZHKO, N. G.,
Khar'kov Scientific Chemical-Pharmaceutical Research Institute

"The use of an Anion Exchange Resin in Isolation of Codeine and Morphine From
Poppy Pods"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 12, Dec 72, pp 34-37

Abstract: After preliminary testing it was established that the best sorption properties towards morphine were exhibited by the strongly basic anion exchange resin AV-17 in the hydroxyl form with 2% divinylbenzene. Using this material, alcoholic ammonia extracts of poppy pods were passed through the column. Morphine, phenolic alkaloids and acid resins were bound to the resin while codeine, nonphenolic alkaloids and basic resins were eluted from the column. After this separation, routine isolation and purification of morphine and codeine were carried out.

1/1

1/2 007
TITLE—MODIFIED PRODUCTION OF ERGOTOL —U— UNCLASSIFIED
PROCESSING DATE—13NOV70
AUTHOR—(03)—BOZHKO, N.G., SKORKIN, L.V., TROPP, M.YA.
CCOUNTRY OF INFO—USSR
SOURCE—KHIM. FARM. ZH. 1970, 4(1), 52
DATE PUBLISHED—70
SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS—ALKALOID, PROCESSED PLANT PRODUCT
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—1990/0996
STEP NO—UR/0450/70/004/001/0052/0052
CIRC ACCESSION NO—AP0109153
UNCLASSIFIED

478 007 UNCLASSIFIED REFERENCE DATE 1977
 CIRC. ACCESSIBLE NO. APO100153
 ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. ERGOT ALKALOIDS WERE EXTD. WITH
 DILD. HCl (PH 1.7-1.9) AT 10DEGREES, ADSORBED ON KIENSELGUHR OR SILICA
 CONTG. ABSORPTIVE IN THE PRESENCE OF 10PERCENT NaCl, AND ELUTED BY CHCl
 SUB3 OR CH SUB2 Cl SUB2 MIXED WITH A 10PERCENT ALC. SOLN. CONTG. A BASE.
 THE NEXT ELUATION OF THE ALKALOIDS WAS WITH CHCl SUB3 MINUS C SUB6 H
 SUB6 IN VARIOUS RATIOS AND THE ELUATE DRIED. AFTER SOLN. OF THE POT
 RESIDUE IN ACETONE, I WAS PPTD. BY ADDN. OF AN ALC. SOLN. OF H SUB3 PO
 SUB4. THE MOTHER LIQUOR AFTER SEPN. OF THE PHOSPHATES WAS NEUTRALIZED
 BY ADDN. OF NH SUB3 TO PH 7.0, CAUSING THE PPTN. OF ADDNL. PHOSPHATES
 WHICH WERE ADDED TO THE BASIC PRODUCT. THE TOTAL YIELD OF H SUB3 PO
 SUB4 ERGOT ALKALOID SALTS WAS NOT SMALLER THAN 80PERCENT. THIS METHOD
 YIELDED ERGOTOL, THE TOTAL ALKALOID CONTENT BEING 98PERCENT, THE
 COMBINED BASES HAVING (ALPHA) 20 OVER D MINUS 130 TO 140DEGREES (C 0.5,
 CHCl SUB3).

UNCLASSIFIED

Miscellaneous

USSR

UDC: 539.4.019.1

SAMSONOV, G. V., ALEXSEYEVSKIY, V. P., BOZHKO, S. A., and YAROSH, V. V., Kiev

"The Effect of Explosion on Refractory Carbides"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 73, pp 108-112

Abstract: The authors study the effect of explosion on refractory carbides. Hot pressed specimens of the refractory $TiC_{0.98}$, $ZrC_{0.96}$, and $NbC_{0.99}$ carbides were subjected to the action of shock waves. The reduction by explosion was carried out in steel cylindrical storage ampules with pressure in the detonation front of the explosive of 120 and 67 kbars. After the explosion, higher micro-hardness was observed in the case of niobium carbide and higher dislocation density in the case of all of the other carbides studied up to 10^{10} cm^{-2} .

1/1

USSR

BOZHKO, S. A. and SAMSONOV, G. V., Institute of Problems of Material Science,
Academy of Sciences UkrSSR

"On the Mechanism of Collective Recrystallization in Titanium Carbide"

Kiev, Poroshkovaya Metallurgiya, No 2 (86), Feb 70, pp 46-52

Abstract: Hot-pressed sintered titanium carbide specimens with various carbon concentrations and porosities of 2-8% were used for studying collective recrystallization. It was found that collective recrystallization begins after surface hardening at 1500-1600°C. The increase in grain size for defective carbides starts at lower temperatures and is more intensive than for carbides approaching the stoichiometric composition. The motive force for collective recrystallization is excess grain-boundary energy. It was found that the activation energy for the recrystallization process is appreciably dependent on the degree of development of this process, the heating rate, and the degree of plastic deformation. These various factors are characterized by the limiting activation energy, which is related to the electronic structure of the material. It was found that the limiting activation energy for titanium carbide in the homogeneity region at high temperatures increases as the stoichiometric composition is approached.

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USSR

BOZHKO, S. A., et al, Poroshkovaya Metallurgiya, No 2 (86), Feb 70, pp 46-52

The nature of this dependence is analogous to that found for the activation energy of collective recrystallization of titanium carbide, but quantitatively the recrystallization activation energy is lower by a factor of 2.5. This is probably due to thermodynamic instability determined by excess energy at grain boundaries, even at room temperature. It is assumed that collective recrystallization is the result of an atomic mechanism of grain boundary migration in titanium carbide caused by local melting at grain boundaries. Nonlocalized electrons which account for energy exchange between atoms apparently play an important part in the process of grain boundary migration.

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1/2 025 UNCLASSIFIED PROCESSING DATE--13SEP70
TITLE--MECHANISM OF THE COARSENING RECRYSTALLIZATION IN TITANIUM CARBIDE
-U-
AUTHOR-(02)-BOZHKO, S.A., SAMSONOV, G.V.
COUNTRY OF INFO--USSR
SOURCE--POROSHKOVAIA METALLURGIYA, VOL. 10, FEB. 1970, P 46-52
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--CHEMICAL REACTION MECHANISM, CRYSTALLIZATION, ACTIVATION
ENERGY, TITANIUM CARBIDE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0591 STEP NO--UK/0226/70/010/000/0046/0052
CIRC ACCESSION NO--AP0107183
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0107183

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE COARSENING RECRYSTALLIZATION IN A COMPACTED POWDER OF TITANIUM CARBIDE WITHIN THE HOMOGENEOUS REGION. THE RELATION BETWEEN THE INITIAL ACTIVATION ENERGY AND THE COMPOSITION OF TIC IS DETERMINED. THE RESULTS OBTAINED ARE DISCUSSED TAKING INTO CONSIDERATION THE ROLE OF NONLOCALIZED ELECTRONS IN THE ENERGY EXCHANGE BETWEEN ATOMS DURING MIGRATION OF GRAIN BOUNDARIES.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--COLLECTIVE RECRYSTALLIZATION IN FREELY POURED POWDERS OF ZIRCONIUM
CARBIDE -U-
AUTHOR-(02)-SAMSONOV, G.V., BOZHKO, S.A. **B**
COUNTRY OF INFO--USSR
SOURCE--POROSH. MET., AKAD. NAUK UKR. SSR; NO. 3. 35-8(MAR 1970)
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--ZIRCONIUM CARBIDE, RECRYSTALLIZATION, NONSTOICHIOMETRIC
COMPOUND, ACTIVATION ENERGY, LATTICE DEFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0115 STEP NO--UR/0226/70/003/000/0035/0038
CIRC ACCESSION NO--AP0127741
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127741

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT WAS ESTABLISHED THAT IN FREELY
POURED POWDERS OF NONSTOICHIOMETRIC PHASES OF ZIRCONIUM CARBIDE THE
ACTIVATION ENERGY OF THE COLLECTIVE RECRYSTALLIZATION DECREASED WITH AN
INCREASE IN THE IMPERFECTION OF CARBON SUBLATTICE. THE GROWTH OF THE
ACTIVATION ENERGY FROM TIC SUBX TO NBC SUBX AND FURTHER TO ZRC SUBX WAS
IN AGREEMENT WITH THE TYPE OF ELECTRONIC INTERACTION IN THESE PHASES.

UNCLASSIFIED

USSR

UDC 621.791.79:669.7.014

AVRAMENKO, V. I., Engineer, LEBEDEV, B. F., Doctor of Technical Sciences, and
BOZHKO, V. I., Engineer, Institute of Electric Welding imeni Ye. O. Paton;
and RUBANOVICH, B. B., Engineer, Stal'konstruktsiya Trust

"Some Means of Increasing Electroslag Welding Productivity"

Moscow, Svarochnoye Proizvodstvo, No 10, 1973, pp 16-17

Abstract: Reducing the gap in a butt joint while simultaneously increasing the feed rate of electrode wire is the most advantageous and simple method of increasing electroslag welding productivity, and work has been done in this area at the Institute of Electric Welding imeni Ye. O. Paton, where samples of low-alloy steels O9G2S and 10G2S were welded using wire Sv-10G2 and AN-48 flux. An empirical formula was established making it possible to determine the critical rate of electrode wire feed during electroslag welding which is based on the cross sectional area of the gap and electrode wire diameter. Gaps of 16, 18, 20, 20, 20, and 20 mm were determined for steel thicknesses of 20, 24, 30, 36, 40, and 50 mm. Experiments showed that gaps 20 ± 2 mm were optimum for steel thicknesses of 30-50 mm. The optimum electrode diameter was 2-3 mm and optimum welding wire feed rate--40-50 m/hr. 1 figure, 2 bibliographic references.

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USSR

UDC 535.36

BOZHKOVA, A. I., Physics Institute imeni P. N. Lebedev of the USSR Academy of Sciences

"Induced Scattering of Light on a Liquid Surface in the Presence of Complete Fresnel Reflection"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 233-241

Abstract: A study was made of induced scattering of light on a free liquid surface in the case of complete Fresnel reflection. More optimal conditions of observing induced surface scattering, lowering its energy threshold, were found. In the case mentioned, the threshold intensities I_0 (and consequently, the energy) can be reduced by several (4-5) times by comparison with the case of ordinary wave refraction. Various methods of solving the boundary problem of electrodynamics for uneven surfaces are also investigated as applied to the given problem. For scattering directions close to the direction of a mirror-reflected beam, simple analytical expressions were obtained for the threshold intensity and the spectrum of the scattered radiation.

Some numerical values of the optimal threshold intensities are presented for two low-viscosity liquids (liquid nitrogen, ether) and a high-viscosity liquid (glycerine).

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72 26

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--DOUBLE BEAM DILATOMETER -U-

THOR--(05)-SARYINA, L.I., ANTROPOV, A.A., YEVREINOV, V.V., ENTELIS,
S.G., SEZHEV, A.K.
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 705-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DILATOMETRIC ANALYSIS, POLYMERIZATION, CHEMICAL REACTION RATE,
OLIGOMER, ADIPATE, POLYETHYLENE, ORGANIC ISOCYANATE, CHEMICAL LABORATORY
APPARATUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

BOXY REEL/FRA--1992/0312

STEP NO--UR/0459/70/012/003/0705/0709

IRC ACCESSION NO--AP0111506

UNCLASSIFIED

2/2-026

UNCLASSIFIED

PROCESSING DATE--02OCT70

IRC ACCESSION NO--AP0111500

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE DILATOMETER CONSISTS OF 2
HERMETICALLY SEALED CHAMBERS SEPD. BY A MEMBRANE. THE POLYMN. IS
CONDUCTED IN 1 CHAMBER AND THE OTHER IS CONNECTED TO A REGULATING
RECORDING SYSTEM, WHICH AUTOMATICALLY EQUALIZES THE PRESSURE ON BOTH
SIDES OF THE MEMBRANE AND RECORDS ITS CHANGES. THE APP. WAS CHECKED BY
DETG. THE RATE CONSTS. OF THE REACTION BETWEEN OLIGOMERIC POLY(ETHYLENE
ADIPATE) AND ALPHA NAPHTHYLENE DIISOCYANATE, HEXAMETHYLENE DIISOCYANATE,
OR 4,4PRIME DIPHENYLMETHANE DIISOCYANATE, DILATOMETRICALLY AS WELL AS BY
A CHEM. METHOD (H. E. STAGG, 1946).

UNCLASSIFIED

Photoelectric Effect

USSR

UDC 535.215.1

BOZHKOV, V. G.

"Frequency Dependence of Surface Photoeffect in Semiconductors"

Chastotnaya zavisimost' poverkhnostnogo fotoeffekta v poluprovodnikakh (cf English above. Editorial Board Of Journal "Physics And Technology Of Semiconductors," AS USSR), Leningrad, 1970, 15 pp, ill., Bib., 12 titles [No 2079-70] (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B238 DEP)

Translation: The frequency dependence is analyzed of the surface photoeffect with the assumption of a low level of injection and maintenance according to the Boltzman law of the distribution of carriers in the space charge region and the discrete energy center at the surface which is illuminated. The ohmic contact at the back of the wafer is characterized by an arbitrary rate of recombination. It is shown that in the general case the constant of low-frequency dispersion is not equal to the effective life time and for low-resistance semiconductors with the presence of folds of the bands of the corresponding inversion, can considerably exceed the latter. In case of depletion and enrichment at the surface of not too thin wafers, the constant is close to the effective life time. Determination of the frequency dependence of the surface photoeffect can be used as an additional method of investigation of the surface of semiconductors.

Author's abstract.

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1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--KINETICS OF SURFACE PHOTOELECTRICITY IN SEMICONDUCTORS -U-
AUTHOR--BOZHKOVA, V.G. **B**
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(4), 62-9
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS
TOPIC TAGS--GERMANIUM SEMICONDUCTOR, ELECTRIC POTENTIAL, SURFACE CURRENT,
PN JUNCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1481 STEP NO--UR/0139/70/013/004/0062/0068
CIRC ACCESSION NO--A10150410
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0130410

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF SURFACE PHOTOPOTENTIAL IN GE TYPE SEMICONDUCTORS WAS STUDIED THEORETICALLY UNDER DIFFERENT INITIAL AND BOUNDARY CONDITIONS. FIRST, THE THEORY OF PULSED SURFACE PHOTOPOTENTIAL, DEVELOPED BY GARRET AND BRATTAIN (1955), WAS OUTLINED AND THE FUNDAMENTAL CONDITION OF CONSTANCY OF THE SURFACE CHARGE DURING THE ILLUMINATION TIME WAS EXPRESSED. CONSIDERING LINEAR APPROX., AN ANAL. SHOWED THAT THE KINETICS OF SURFACE PHOTOPOTENTIAL WAS GOVERNED BY THE KINETICS OF CONC. OF NONEQUIL. CARRIERS IN PROXIMITY TO THE SPACE CHARGE REGION AND COULD BE FOUND FROM THE SOLN. OF THE CORRESPONDING CONTINUITY EQUATION. THE CASES OF HOMOGENEOUS SEMICONDUCTOR AND DIODE WERE TREATED, AND IT WAS SHOWN THAT KINETICS OF SURFACE PHOTOPOTENTIAL, FOR BOTH THE RISE AND THE DECAY OF SIGNALS, AGREED WITH THE KINETICS OF THE PHOTOPOTENTIAL AT THE P-N JUNCTION AND COULD BE DESCRIBED BY AN EXPRESSION EXPONENTIAL IN THE TIME CONST. THE CALCNS. WERE CHECKED EXPTL. (N-GE WITH RESISTIVITY OF 20 OHM-CM AND L SUBP EQUALS 1.5 MM), AND GOOD AGREEMENT WAS FOUND. (USE OF THE CALCNS. FOR THE DETN. OF ESSENTIAL SURFACE CHARACTERISTICS, SUCH AS SURFACE RECOMBINATION RATE AND SURFACE POTENTIAL, WAS DEMONSTRATED. FACILITY: SIB. FIZ.-TEKH. INST. IM. KUZNETSOVA, TOMSK, USSR.

UNCLASSIFIED

USSR

UDC: 539.4:624.012

DARAGAN, K. A., BOZHKO, V. I., TELYANTNIKOV, V. M., BORODIN, V. Ya.

"Experimental Investigation of the Supporting Capacity of a Prestressed Reinforced Concrete Beam"

Sb. tr. Khabarovskiy politekhn. in-t (Collection of Works of the Khabarov Polytechnical Institute), 1969 (1970), vyp. 19, pp 112-116 (from RZh-Mekhanika, No 9, Sep 70, Abstract No 9V928)

Translation: This paper presents the results of an experimental investigation of a thin-walled T-beam with prestressed reinforced concrete wall designed for the span structures in bridges. The experimental beam was a combination structure made up of a reinforced concrete rib with a plate concretized to it. The rib measured 55 x 4.5 cm thickened in the lower zone to accommodate the prestressed reinforcement. The rib was made from grade 500 cement-sand mortar. The rib was reinforced by 12 fabric nets No 5 GOST 3826-47 with 0.7 mm diameter wire, a single welded frame of corrugated rod reinforcement 12 mm in diameter of class A-II steel and high-strength prestressed cold-rolled corrugated wire 5 mm in diameter in a bundle of 12. The shelf was made from grade M300 concrete and had structural reinforcement. The goal of the research was to determine the supporting capacity, rigidity and crack resistance of the

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USSR

DARAGAN, K. A., et al., Sb. tr. Khabarovskiy politekhn. in-t, 1969 (1970),
vyp 19, pp 112-116

beam when subjected to a uniformly distributed load. The beam was loaded in stages amounting to 10 percent of the rated breaking load. Deformations and vertical displacements were measured by electric strain gauges and deflectometers respectively. The beam was not loaded to fracture. The maximum values of the bending moment and the transverse force were 10.2 Tm and 9.5 T respectively. Under maximum loading, equal to 18 T, the greatest flexure of the beam was 2.22 mm, which is 1/1955 of the span. Cracks appeared under loading amounting to 65 percent of the fracture load.
Z. L. Gil'gur.

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1/2 033 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--DETERMINATION OF THE TYPE OF RESPIRATION WITH THE AID OF
ELECTROACOUSTIC CONVERTERS -U-
AUTHOR--BOZHKOVA, Z.
COUNTRY OF INFO--USSR *B*
SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 2, PP 60-62
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PEDIATRICS, MEDICAL APPARATUS, RESPIRATORY SYSTEM

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1850 STEP NO--UR/0511/70/049/002/0060/0062
CIRC ACCESSION NO--AP0101895
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101895

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. THE ARTICLE CONTAINS A DESCRIPTION OF AN OBJECTIVE METHOD OF DETERMINING THE TYPE OF RESPIRATION IN CHILDREN. THE AUTHOR DESIGNED AN APPARATUS BASED ON PIEZOELECTRIC ELECTROACOUSTIC CONVERTERS WHICH ENABLES SIMULTANEOUS GRAPHIC RECORDING OF THE RESPIRATION THROUGH THE NOSE AND MOUTH. THE APPARATUS IS CONNECTED TO THE ELECTROCARDIOGRAPH THIS MAKING IT POSSIBLE TO INVESTIGATE NOT ONLY THE TYPE OF RESPIRATION, BUT ALSO THE CARDIAC ACTIVITY. IT WAS ESTABLISHED THAT THERE ARE CHILDREN WHO BREATHE ONLY THROUGH THE NOSE; ONLY THROUGH THE MOUTH AND SIMULTANEOUSLY THROUGH THE MOUTH AND NOSE.

UNCLASSIFIED

USSR

UDC 621.382.2

SIROTA, N. N., KOLSHENOV, S. I., GATAL'CHIK, A. V., and ~~RODIONOV~~,
G. V.

"Effect of Neutron Irradiation on Silicon Carbide p-n Junctions"

Minsk, Izvestiya Akademii Nauk BSSR, No. 3, 1971, pp 109-111

Abstract: This brief communication describes experiments performed in irradiation by reactor neutrons of p-n junctions of $6H\alpha$ -SiC with electronic conductivity. The junctions were obtained by diffusion of aluminum and boron. The original SiC crystals had a resistivity of $1 \cdot 10^{-1}$ to $1 \cdot 10^{-2}$ ohm cm. Irradiation by the fast neutrons was done in the IR-2000 reactor of the Belorussian Academy of Sciences, at a temperature of 60° C, with the thermal neutrons cut out by a cadmium filter. The intensity of the fast-neutron current was $4 \cdot 10^{10}$ neutrons/cm² sec. The effect of the neutrons on the volt-ampere and light characteristics of the p-n junctions was studied. Curves are plotted for the effect of the irradiation on the forward and reverse sections of the volt-ampere characteristic, for the effect of the irradiation on the spectral characteristic of the recombination glow, and for the change in integral intensity of the recombination glow as a function of the forward current before and after irradiation by various neutron doses.

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USSR

SIROTA, N. N., et al, Izvestiya Akademii Nauk BSSR, No. 3, 1971, pp 109-111

It is noted that the volt-ampere characteristics changed markedly after irradiation by fast neutrons of a dosage greater than $1 \cdot 10^{14}$ neutrons/cm², and that the spectral and integral characteristics of the electroluminescence show a monotonic drop in the glow intensity with increasing neutron dosages. The authors are members of the Institute of Solid State and Semiconductor Physics, Academy of Sciences, BSSR.

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USSR

UDC 621.391.81

BOZHOK, Yu. D., PASECHNYI, S. V.

"On the Evaluation of the Gain Due to Filtration of a Signal In a Background of Noise and Reverberation Interference"

Vestn. Kiyev. politekhn. inta. Ser. radiotekhn. i elektroakust. (Bulletin of the Kiev Polytechnical Institute. Radio Engineering and Electroacoustics Series), 1971, No 8, pp 61-64 (from RZh-Radiotekhnika, No 9, Sep 1971, Abstract No 9A51)

Translation: The paper analyzes the gain due to filtration-type preselectors of a pulse signal in a background of an additive mixture of non-white noise and reverberation interference. The amplitude of the signal and the dispersion of the total noise are determined at the output of an ideal band-pass filter, a filter with a bell characteristic and a single resonance circuit. Computed formulas are obtained which make it possible to evaluate the gain because of filtration with respect to the criterion of the signal-to-noise ratio and a comparison is made of the effectiveness of the use of various preselectors. 2 ill. 1 ref. Summary.

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Acc. Nr:

AP0052067

Ref. Code: UR 9396

PRIMARY SOURCE: Patologicheskaya Fizyologiya i
Eksperimental'naya Terapiya, 1970, Vol. 14,
Nr 1, pp 17-21

THE EFFECT OF BLOOD DILUTION WITH PLASMA SUBSTITUTES ON THE RE-
STORATION OF THE VITAL FUNCTIONS IN REVIVAL BY EXTRACORPOREAL
CIRCULATION

A. A. Bozhko

Experiments were performed on 19 dogs. Superficial omnopon-nembutal anesthesia was applied and a study was made of the possibility of restoration of vital functions of the animals which sustained 10-minute complete arrest of the circulation. Revival was carried out by the method of extracorporeal circulation with replacement of 30% of the circulating blood with polyglucine (dextran) or with cheopolyglucine, without the application of artificial respiration. All the animals were revived. The content of hemoglobin was reduced to 8.8 ± 0.2 g%, this did not hinder rapid restoration of the functions due to high volume velocity of artificial circulation (80 to 100 ml/kg/min) and arterial pressure increase (during the period of complete extracorporeal circulation) with the aid of noradrenalin. Superficial hypothermia created in the process of extracorporeal circulation aided adaptation of the organism to reduced hemoglobin content and stable restoration of the functions in 13 animals.

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Hematology

USSR

UDC 616-036.882-085.384

 BOZH'YEV, A. A., Laboratory of Experimental Physiology for Resuscitation, Academy of Medical Sciences USSR

"The Effect of Dilution of Blood with Plasma Substitutes on the Restoration of Vital Functions During Resuscitation by Extracorporeal Circulation"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1970, pp 17-21

Abstract: Dogs were resuscitated by extracorporeal circulation after 10 min of cardiac arrest induced by an electric shock. Polyglucine (dextran) or rheopolyglucine was substituted for 30% of the blood. All the animals (19) survived. The decrease in hemoglobin concentration to 8.8 ± 0.2 g% did not prevent a rapid restoration of respiration, cardiac activity, corneal reflexes, or other vital functions due to the rapid rate of blood circulation (80 to 100 ml/kg/min) and elevated arterial pressure (following injection of norepinephrine).

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USSR

UDC 616.986.722-036.22(479.243-22)

BOZIYAN, Kh. A., Oblast Health Department, Nagorno-Karabakh Autonomous Region, Azerbaydzhan SSR

"An Outbreak of Leptospirosis in the Village of Nynga"

Moscow, Gigiyena i Sanitariya, No 5, 1970, p 91

Abstract: Leptospirosis in some parts of the country presents a serious epidemiological and economic problem, of interest to physicians and veterinary workers. In July 1965, acute illness with the typical clinical symptoms of leptospirosis occurred in the village of Nynga, Martuninskiy Rayon, Nagorno-Karabakh Autonomous Region. The first cases were regarded as influenza, phlebotomus fever, and so forth. Correct diagnosis was not made until the patients were admitted to the Stepanakertskiy Oblast hospital. Children and youths, chiefly boys, 7 to 17 years of age became sick. Two-thirds of them were local residents, and one-third were visitors from different cities in the republic. All became sick after swimming in a pool set up on the Khonashen-chay River. The disease followed a typical course: sudden onset, chills, elevated temperature, headache, muscle pains throughout the body, especially in the gastrocnemius, cervical, and lumbar muscles. The febrile period usually lasted 5 to 7 days. In the mild version the temperature did not rise above 38-38.5°C, but in a severe course it was 40°C or more. More

USSR

BOZIYAN, Kh. A., Gigiyena i Sanitariya, No 5, 1970, p 91

than two-thirds of the patients had one of two relapses lasting 1 to 3 days. All (41 persons) recovered within one month.

The diagnosis was confirmed by clinical evidence and laboratory tests. The leptospirosis carrier state was detected among small mammals (L pomona carriers were found among house mice and wood mice).

This is the first report of leptospirosis in the Nagorno-Karabakh Autonomous Region. The following measures were undertaken to avoid recurrences of the infection. All the artificial swimming facilities that cause water to stagnate (ponds, pools, etc) which were set up along the Khonashen-chay River were eliminated. Small mammals were exterminated. A variety of sanitary-veterinary measures were executed in the basin of the Khonashen-chay River. A great deal of educational work on leptospirosis prevention was conducted among the people. Also, a seminar on the symptoms, diagnosis, treatment, and prevention of leptospirosis was organized for medical workers. Thus, the timely execution of a host of essential measures resulted in quick termination of the outbreak of leptospirosis.

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USSR

ANZON, Z. V., et al, Institute of Nuclear Physics, Academy of Sciences, Kazakh SSR, Alma-Ata; BOZOKI, G., et al, Central Research Institute of Physics, Budapest; DALKHAZHAY, N., et al, High-Energy Laboratory, Joint Institute of Nuclear Research, Dubna; BABETSKIY, Ya., et al, Laboratory of High-Energy Physics, Institute of Nuclear Research, Krakow; ZHDANOV, G. B., et al, Physics Institute imeni P. M. Lebedev of the Academy of Sciences, USSR, Moscow; ALEKSEYEVA, K. I., Scientific Research Institute of Nuclear Physics, Moscow State University, Moscow; CHERNEV, Kh., TODOROV, P. T., Institute of Nuclear Physics, Bulgarian Academy of Sciences, Sofia; AZIMOV, S. A., et al, Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR, Tashkent; CHADRAA, V., SHARKHI, D., TUVDENMORZH, D., Institute of Physics and Mathematics, Mongolian Academy of Sciences, Ulan-Bator

"General Characteristics of Pion-Nucleon Interactions in a Nuclear Emulsion at Energies of 45 and 60 Gigaelectron-Volts"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 9, 1970, pp 1934-1937

Abstract: In the paper are presented the general characteristics of ion-nucleon interactions in nuclear emulsions irradiated on the accelerator in Serpukhov. The preliminary experimental data, obtained in various groups coordinated by the

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✓ USSR

ANZON, Z. V., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 9, 1970, pp 1934-1937

Photoemulsion Committee of the Joint Institute of Nuclear Research, were presented simultaneously to the International Conference on the Physics of Elementary Particles in Lund and at the 11th International Conference on Cosmic Rays in Budapest. In the present paper are presented results obtained on the basis of extensive statistical material. Approximately 1500 π -N-interactions at energies of 60 and 45 gigaelectron-volts are analyzed. The free paths of inelastic interaction are 43.7 ± 0.5 and 42.8 ± 1.2 cm long respectively. The average multiplicity for π -p-interactions at 60 gigaelectron-volts equals 6.4 ± 0.3 . 4 figures, 6 bibliographic entries.

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Electricity & Magnetism

USSR

UDC 530.145

BAGROV, V. G., BOZRIKOV, P. V., GITMAN, D. M., LAVROV, M. M.

"Electron in the Field of a Plane, Quantized, Monochromatic Electromagnetic Wave"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 8, 1973, pp 55-58

Abstract: The exact solution of the Dirac equation was obtained for an electron moving in a field of a quantized, monochromatic, plane electromagnetic wave of arbitrary polarization. The investigation of the arbitrary polarization of the wave leads to nontrivial physical consequences. The solution was found by the method of canonical transformation of the generation and destruction operators proposed by Bogolyubov and Tyablikov [ZhETF, No 19, 256, 1949]. In the special case of linear polarization the results obtained in this article are identical with the results of I. Berson [ZhETF, No 56, 1627, 1969], who demonstrated that the problem of movement of an electron in a quantized wave field can be solved exactly if it is restricted to the case of a monochromatic, linearly polarized wave. Volkov's solution [D. M. Volkov, Zs. Phys., Vol 94, 250, 1935] can be obtained from the indicated solution by determining the coherent state and subsequent transition to the limit as $V \rightarrow \infty$ (V is the normalization volume).

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USSR

UDC 621.396.677.833.2(088.8)

YERUKHIMOVICH, Yu. A., BOZUYEV, B.

"Antenna"

USSR Author's Certificate No 280474, filed 3 July 68, published 26 Jan 71
(from RZh--Radiotekhnika, No 9, Sep 1971, Abstract No 9B57P)

Translation: An antenna is proposed for terrestrial or cosmic radio communication. The basic mirror of the antenna has a circular edge on which is placed a cylindrical attachment [nasadka] of the same diameter. The attachment has a height equal to the average wave length (λ_{av}). The external edge of the attachment is made in the form of an even number of spiral cuts with a forward or counter direction of the spirals. These media are offset in height, one with regard to another, by $\lambda_{av}/2$ and are cut through at the radius of the attachment to a height of $\lambda_{av}/2$. Edge waves [krayevyye volny] from the edge of the mirror which is excited by a source proceed to an observation point occurring in the far zone on the symmetry axis of the system or close to it, in the rear half-space. The mirror is excited by an in-phase source. All points of the spirally cut attachment dissipate energy in various directions, i.e., practically diffuse scattering of energy results. In addition, compensation is accomplished of fields incoming to the observation

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USSR

YERUKHIMOVICH, Yu. A., BOZUYEV, B., USSR Author's Certificate No 280574,
filed 3 July 68, published 26 Jan 71 (from RZh--Radiotekhnika, No 9,
Sep 1971, Abstract No 9B57P)

point from each pair of diametrically opposite points of the attachment.
Consequently, the total effect during rearward radiation will be considerably weakened. An increase of the number of cuts increases the symmetry of the antenna. 2 ill. V. S.

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USSR

UDC: 534

BRADISTILOV, G.

"Cyclic and Asymptotic Oscillations of Certain Autonomous Systems and Their Application"

Sophia, Teor. i. Pril. Mekh. 1 Nats. Kongres, Varna, 1969 (Theory and Application of Mechanics, First National Congress, Varna, 1969), 1971, vol 2, pp 9-14 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2A306)

Translation: The investigation is conducted of the existence of cyclic asymptatic solutions of systems of differential equations of the form:

where $A = \{a_{ik}\}$ and $B = \{b_{ik}\}$ are the square matrix of n order, and $x = (x_1, \dots, x_n)$, $f = (f_1, \dots, f_n)$ are vectors, $\{g_j (j=1, \dots, n)\}$ are analytical functions of x, λ and of the small parameter λ in the corresponding region. In a particular case these systems follow the law of motion of physical pendulums coupled in series and located in a vertical plane around the equilibrium position.

8 references.

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USSR

UDC 621.398

BRAGIN, A. A., FEDORIV, R. F., L'vov

"A Method of Synchronization in Telemetering Systems"

Kiev, Otkor i Peredacha Informatsii, No 29, 1971, pp 59-62

Abstract: A method of synchronizing the transmitting and receiving parts of telemetering systems with time division of the channels by the information signal is described. A circuit is considered for realization of a general channel signal of a system with pulse duration modulation and a constant cycle frequency. The device implementing the described procedure for synchronization and cophasing the channels comprises a converter to convert the pulse duration to the amplitude of the peak detector, a comparison circuit, a binary cell (commutator), and time selectors. Various versions of the circuit diagram for the device are analyzed and means of selecting the circuit parameters are discussed.

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Acc. Nr: **AP0044700**

Ref. Code: **OR0497**

PRIMARY SOURCE: *Klinicheskaya Meditsina*, 1970, Vol 48,
Nr 1, pp 49-55

THE CLINICAL PICTURE AND DIAGNOSIS OF ANGINA
ABDOMINALIS

A. V. Pokrovskiy, B. I. Bragin, I. I. Rushanov, L. S. Zingerman
Summary

Among 281 patients with obstructive lesions of the abdominal aorta and its branches the authors revealed 47 persons with occlusions of the visceral vessels; of this number in 20 cases they occurred as the result of non-specific aortoarteritis and in 27 — of atherosclerosis; only in 24 patients there were clinical manifestations of the disease.

As a rule, the clinical picture of angina abdominalis occurred in affection of two or three branches; only in isolated lesion of the splanchnic artery there were definite clinical manifestations. Routine clinical examination enables in most cases to suspect the true nature of the pathology and the final diagnosis is established during X-ray investigation (preferably serial) in the dorsoventral and lateral projections.

REEL/FRA
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0244

Acc. Nr: **AP0047352**

Ref. Code: **UR0589**

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1, pp 54-61

SURGICAL TREATMENT OF ANGINA ABDOMINALIS

A. V. Pokrovskiy, B. I. Bragin, V. S. Rubotnikov and D. M. Tsireskin

The paper deals with the problems of diagnosis and surgical treatment of the abdominal ischemic syndrome. The authors have observed 24 patients with angina abdominalis in investigation of 281 patients with atherosclerotic occlusion of the abdominal aorta and its branches. Eight patients with angina abdominalis were operated upon with one lethal issue. It is considered that: 1) the established diagnosis of angina abdominalis is an indication to surgical therapy; 2) the approach — median laparotomy in extraval compression of the celiac artery, left — sided thoracolaparotomy in all other cases; 3) an end-to end distal anastomosis in reconstructive operations seems to be more rational, it is more advantageous hemodynamically; 4) recognition and surgical treatment of angina abdominalis in due course eliminating ischemia enabled to avoid lethal intestinal infarction.

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BRAGIN, D. Ya., SHKANOV, I. N., VASIL'YEV, G. V.

"Problem of Designing Bolt Joints Under Conditions of Stress Relaxation and Creep with Vibrations"

Tr. Kazan. Aviats. In-ta [Works of Kazan Aviation Institute], No 136, 1971, pp 34-41, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V664 by V. S. Namestnikov).

Translation: Results are presented from experiments on relaxation of stresses in bolt joints of three heat-resistant steels with and without vibration and empirical formulas describing the results produced are presented.

1/1

USSR

UDC 539.4

BRAGIN, D. YA., LOGINOV, N. Z., SHKANOV, I. N., Kazan' Aviation Institute,
Kazan'

"Effect of Certain Engineering Factors on the Fatigue Strength of Titanium Alloys"

Kiev, Problemy prochnosti, No. 8, Aug 71, pp 78-82

Abstract: Fatigue tests were conducted on circular samples of titanium alloys widely used in the aviation industry. It is noted that despite the extensive use these alloys have several considerable shortcomings, including great inhomogeneity in the micro- and macrostructure, high sensitivity to stress concentration under variable loads, and considerable variability of mechanical properties as a result of working processes. The test samples had a diameter of 5 and 7.5 mm under pure bending with a frequency of rotation of 50 Hz. Tests based on statistical data showed several features in the behavior of titanium alloys under cold working which lead to a low value of the fatigue limit at the extreme boundary of the dispersion region. It is shown that the application of electrochemical working, electric polishing, and protective media in mechanical working lowers the cold working layer and stabilizes the

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- BRAGIN, D. YA., et al, Problemy prochnosti, No. 8, Aug 71, pp 78-82

mechanical properties of the alloys. It is concluded that the process of electrochemical working at the present level of its technological development should be applied as a final operation in fabricating titanium alloy parts.

2/2

USSR

UDC 669.245'26.018.44 :539.4

BRAGIN, D. YA., SHKANOV, I. N., GOL'DFARB, I. P., ZABIBULLINA, N. V.

"Effect of the Technological Conditions of High-Temperature Thermomechanical Treatment on the Static and Fatigue Strength of Heat-Resistant Alloy"

Tekhnol. i organiz. proiz-va. Nauchno-proizv. sb. (Technology and Organization of Production. Scientific Production Collection), 1970, No 6, pp 94-96 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 41765)

Translation: The results of studying the fatigue strength of parts made of KhN70MVTYuB high-alloy heat-resistant Cr-Ni alloy subjected to high-temperature thermomechanical treatment are described. Recommendations are made with respect to thermal conditions and degree of plastic flow insuring that high strength qualities will be obtained. There are 3 illustrations, 2 tables, and a 3-entry bibliography. [Kazan' Aviation Institute].

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USSR

UDC:543.426:535.853.24

BRAGIN, G. Ya., KARABEGOV, M. A., SHAPIRO, E. Ye.

"Atomic-Fluorescent Spectroscopy"

Optich. i Titrometrich. Analizatory Zhidk. Sred [Optical and Titrometric Analyzers for Liquid Media], Reports of All Union Conference, 1971, Part 1, Tbilisi, 1971, pp 67-73 (translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 2, 1972, Abstract No 2.32.1095 by V. S Krasnova)

Translation: A theoretical foundation is presented for the conditions of application of atomic-fluorescent spectrophotometry (APS) as a method of determination of micro-concentrations of metals in solutions. The thresholds of sensitivity of APS are presented for analysis of metals with various sources of excitation and various atomizers. Monochromators operating in emission spectroscopy in the UV area of the spectrum, can be used as spectrometers in APS. The range of measurements of the APS includes 6 orders of concentrations and extends into the area of concentrations less than 10 mg/l. With low concentrations and constant power of exciter radiation, the relationship between intensity of fluorescence and concentration of atoms being analyzed is directly proportional. 3 figures; 2 tables; 4 biblio refs.

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BRAGIN I. F.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

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239660 CODE CONVERTER from a residual class system into a weighted number system with a mixed set of bases has between the register of the number to be converted and a pyramid matrix and between the latter and the register of the result identical logic circuits for the commutation of each of the inputs of each position. Any non-coincidence of the results of the first and second checks is established by a comparator circuit in parallel to the register of the result.

2.1.68. as 1206622/18-24. A.I. DOLGOV et alia(28.7.69)
Bul 11/18.3.69. Class 42 m 3. Int.Cl. G 06 f.

AUTHORS: Dolgov, A. I.; Devyatkin, S. A.
Bragin, I. F.

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Acc. Nr.: AP0042570

Ref. Code: UR0293
JPRS 50162

Study of Geoactive Corpuscles and Photoelectrons

(Abstract: "Study of Geoactive Corpuscles and Photoelectrons on the 'Kosmos-261' Satellite," by A. D. Bolyunova, M. L. Bragin, Yu. I. Gal'perin, V. A. Gladyshev, N. V. Dzhordzhio, G. N. Zlotin, I. N. Kiknadze, R. A. Kovrazhkin, T. M. Mulyarchik, Yu. N. Ponomarev, V. V. Temnyy, N. I. Fedorova, Yu. P. Shilyayev, F. K. Shuyskaya and R. V. Shulenina; Moscow, Kosmicheskoye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136)

The artificial earth satellite "Kosmos-261" was used in a study of low-energy geoactive corpuscles and fresh photoelectrons and their interaction with the earth's upper atmosphere. The satellite was launched on 20 December 1968. Orbital inclination to the equator was 71°, so that for a relatively long time it moved almost along a tangent along the auroral zone over the Soviet Far North, making it possible to increase the volume of simultaneous measurements from the satellite and from ground observatories. The storage regime made it possible to extend continuous measurements for periods of several revolutions, including passes over the auroral zones in the Arctic and Antarctic and over the polar caps as far as invariant geomagnetic latitudes 82-85°. During the initial period the satellite apogee was at 670 km and perigee was at 217 km, but it finally

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burnt up upon entering into the dense layers of the atmosphere on 12 February 1969 after making 857 revolutions of the earth. The experiment lasted 53 days. The orbit was such that in the northern hemisphere middle and high latitudes the satellite moved below or close to the maximum of the Foreglon so that ionospheric electron density along its trajectory and its variations could be determined in a number of regions on the basis of measurements by ground ionospheric stations. The period of the experiment included both quiet periods and those with strong disturbances. The experiment was conducted under the "Program of Cooperation Among Socialist Countries in the Field of Space Research and Peaceful Use of Space." Ground measurements were made in Bulgaria, Hungary, East Germany, Poland, Rumania, USSR and Czechoslovakia. Observatories and special expeditionary stations in the USSR participated: in Yakutia, the Far North, Siberia and middle latitudes. The article cited below is divided into four parts: 1) Description of Experiment; 2) Measurement of Low-Energy Electrons; 3) Measurement of Low -Energy Ions; 4) Measurements of Charged Particles with Intermediate and High Energies. Parts 2)-4) are essentially independent articles and are abstracted separately.

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1/2 049 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF TECHNOLOGICAL CONDITIONS ON THE PROPERTIES OF A SILVER,
CADMIUM OXIDE COMPOSITE -U-
AUTHOR-(03)-YUDIN, B.A., KOLESHNIKOV, V.N., BRAGIN, V.P.
COUNTRY OF INFO--USSR
SOURCE--POROSHKOVAYA MET., FEB. 1970, (2), 69-76
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--ELECTRON MICROSCOPY, MOLDING MATERIAL, COMPOSITE MATERIAL,
SILVER, POWDER METALLURGY, PHYSICAL CHEMISTRY PROPERTY, X RAY
DIFFRACTION ANALYSIS, CARBONATE, CADMIUM COMPOUND, METAL OXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0125 STEP NO--UR/0226/70/000/002/0069/0076
CIRC ACCESSION NO--AP0123897
UNCLASSIFIED

2/2 049 UNCLASSIFIED PROCESSING DATE--14NOV70
CIRC ACQUISITION NO. 000124097
ABSTRACT/EXTRACT--(U) GP-00 ABSTRACT. METHODS OF PRODUCING AG AND AL-COO
MOULDINGS (INTENDED TO SERVE AS ELECTRICAL CONTACTS) BY POWDER
METALLURGICAL TECHNIQUES ARE DISCUSSED, WITH SPECIAL REF. TO THE
RELATION BETWEEN THE TECHNOLOGICAL CONDITIONS EMPLOYED IN REDUCING THE
CONSTITUENTS FROM THE CORRESPONDING CARBONATES AND THE PHYSICAL AND
CHEMICAL PROPERTIES OF THE FINAL MATERIALS. ELECTRON MICROSCOPE
EXAMINATION REVEALS A SERIES OF STAGES IN THE REDUCTION OF AG FROM AG
SUB2 CO SUB3, THE AG PARTICLES MERGING BY A MECHANISM REMINISCENT OF THE
MOTION OF A LIQUID, WITH BOTH TWO AND THREE DIMENSIONAL DIFFUSION.
COHERENTLY DIFFUSING AG PARTICLES 0.15 μ M IN DIA. ARE DETECTED BY X RAY
DIFFRACTION.

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1/3 028 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--STUDY OF THE SIGN OF THE ATMOSPHERIC SPACE CHARGE TO AN ALTITUDE OF
86 KM -U-
AUTHOR--BRAGIN, YU.A. *B*
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO 3, 1970, PP
465-467
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, MISSILE TECHNOLOGY

TOPIC TAGS--SOUNDING-ROCKET, SPACE CHARGE, ATMOSPHERE, ATMOSPHERIC
IONIZATION, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0506

STEP NO--UR/0293/70/006/003/0465/0467

CIRC ACCESSION NO--AP0132710

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132710

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IN AN EARLIER STUDY (KOSMICH. ISSLED., 7, NO 5, 741, 1969) THE AUTHOR DESCRIBED A ROCKET METHOD AND THE RESULTS OF MEASUREMENT OF THE SPACE CHARGE IN THE ATMOSPHERE TO AN ALTITUDE OF 50 KM. THE METHOD IS BASED ON MEASUREMENT OF THE POTENTIAL DIFFERENCE BETWEEN TWO IDENTICAL "OPEN" (UNINSULATED) AND "CLOSED" (INSULATED) ELECTRODES AROUND WHICH FLOWS THE IONIZED ATMOSPHERE THROUGH WHICH THE ROCKET MOVES. THE OPEN ELECTRODE DETECTS THE CHARGE OF THE SURROUNDING MEDIUM; DURING THE MEASUREMENT TIME THE CLOSED ELECTRODE VIRTUALLY RETAINS ITS POTENTIAL UNCHANGED. THE REGISTERED POTENTIAL DIFFERENCE BETWEEN THEM IS DEPENDENT ON THE SIGN AND MAGNITUDE OF THE SPACE CHARGE OF THE SURROUNDING MEDIUM. IT WAS DISCOVERED THAT THE ELECTRIC SYSTEM "NEGATIVE EARTH, POSITIVE ATMOSPHERE" IS NOT A SIMPLE ELECTRIC CAPACITOR, BUT CONSISTS OF ALTERNATING REGIONS, LAYERS, WHOSE SPACE CHARGE CHANGES SIGN WITH TRANSITION FROM ONE REGION TO ANOTHER; THE POSITIVE ATMOSPHERIC CHARGE, BALANCING THE NEGATIVE CHARGE OF THE EARTH, IS NOT CONCENTRATED IN THE IONOSPHERE, AS IS USUALLY ASSUMED, BUT INSTEAD IN THE STRATOSPHERE AND UPPER TROPOSPHERE. IT WAS FOUND THAT A CONSIDERABLE PART OF THE D LAYER OF THE IONOSPHERE, WHICH IS USUALLY CONSIDERED POSITIVELY CHARGED, IN ACTUALITY HAS A NEGATIVE SPACE CHARGE. IN THE LOWER PART OF THE POSITIVELY CHARGED ATMOSPHERE AND UPPER TROPOSPHERE DURING GOOD WEATHER THE POSITIVE CHARGES ARE LOWER THAN IN POOR WEATHER. IT APPEARS THAT NEGATIVELY CHARGED RAIN CLOUD FORMATIONS DRIVE UPWARD THE POSITIVE SPACE CHARGE OF THE UPPER TROPOSPHERE AND LOWER STRATOSPHERE.

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PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132710

ABSTRACT/EXTRACT--IN THE LOWER TROPOSPHERE A SYSTEM OF SEVERAL THIN (ABOUT 1 KM THICK) LAYERS OF SPACE CHARGES IS FORMED; THESE DIFFER SHARPLY IN STRENGTH AND SIGN. OBVIOUSLY, WHEREAS THE EXISTENCE AND PROPERTIES OF THE CHARGED LAYERS OF AIR SITUATED BELOW THE POSITIVELY CHARGED STRATOSPHERE AND LOWER TROPOSPHERE ARE VERY DEPENDENT ON WEATHER CONDITIONS, THE MENTIONED POSITIVE LAYER CONSTANTLY EXISTS AND ITS PROPERTIES DO NOT CHANGE SIGNIFICANTLY IN DEPENDENCE ON METEOROLOGICAL CONDITIONS.

UNCLASSIFIED

USSR

UDC 577.472.614+577.391

GUS'KOVA, V. N., BRAGINA, A. N., ZASEDATELEV, A. A., IL'IN, B. N., KUPRIYANOVA, V. M., MASHNEVA, N. I., RODIONOVA, L. F., SUKAL'SKAYA, S. Ya., and TIKHONOVA, A. I., Leningrad Scientific Research Institute of Radiation Hygiene, Ministry of Health RSFSR

"Effect of a Mixture of Uranium Fission Products on Sanitary Conditions and Hydrobionts in Weakly Mineralized Bodies of Fresh Water"

Kiev, Gidrobiologicheskii Zhurnal, Vol 6, No 4, Jul/Aug 70, pp 5-11

Abstract: Pollution of water with two mixtures of radionuclides (mixture I, 52% rare earth radioisotopes and 20% alkali earth elements; mixture II, 40% rare earth radioisotopes and approximately 34% zirconium 95 and niobium 95) at concentrations ranging from $2.0 \cdot 10^{-7}$ to $1.0 \cdot 10^{-5}$ curie/liter was studied. The substances did not affect the sanitary conditions or the hydrobionts studied (*E. coli*, protococcal algae, Infusoria, duckweed). Biochemical oxygen demand and development of saprophytic mycoflora were inhibited only at concentrations above $1.0 \cdot 10^{-3}$ curie/liter. The rate of accumulation decreased from the lowest link (microorganisms) to the highest (fish). Adverse effects of the radioisotopes on developing fish spawn varied with the stage of

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USSR

GUS'KOVA, V. N., et al, Gidrobiologicheskii Zhurnal, Vol 6, No 4, Jul/Aug 70,
pp 5-11

development. Effects were evident in the early stages of embryogenesis at a
concentration of $1 \cdot 10^{-5}$ curie/liter and in later stages at $1.0 \cdot 10^{-3}$ curie/
liter.

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BRAATNA, M P

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Notes of the collection made by the collector.

1952 a more complete description of the collection of
bacteria was determined the type of collagen produced
by the bacteria.

During the course of the experiment we observed that the dynamic appearance of the relationship with collective activity. This was expressed in the response (which may be referred to as "yes" and "no") in the process of collective decision-making. We had noted individual behavior in the earlier stage of the experiment, and observed in the subjects and in the experiment.

The above citations revealed that college students' emotional states were detected prior to the onset of the experiment in all three subjects.

Some of the cultures of *Escherichia coli* O157:H7 from subjects confined for a period of one month in an isolation chamber were investigated for association with enteric activity.

Recently in a study of the effect of chronic treatment with low concentrations of radiation on the growth of *Escherichia coli* bacteria, the authors have been seeking additional information on the mechanism of action of microwave radiation. The bacteriologic effect of three levels of microwave radiation, the hardiest being 1000 mW/cm², was found to be due to the production of an antibiotic substance that was normally not produced by the bacteria. The authors have now attempted to increase the

[illegible]

BRAGINA, M. P.

JPRS 55191

15 February 1972

UDC: 576.851.48.097.29

DYNAMICS OF CHANGES IN THE COMPOSITION OF THE
ESCHERICHIA IN PERSONS PARTICIPATING
IN A MEDICAL-TECHNICAL EXPERIMENT

[Article by M.P. Bragina, N.V. Anisimov, V.M. Shilov, and D.G. Mal'nev;
Moscow, Zhurnal teoreticheskoi i prikladnoi fiziki, No 12, 1971, submitted 10 December 1970, pp 23-28]

Use of the Coliformogenicity Test To Study Dynamic Changes of the Escherichia

A cosmonaut's confinement in the hermetically sealed
cabin of a space vehicle during a long space flight creates
a large number of prerequisites for changes and shifts in the
composition of the normal intestinal microflora.

The long effect of such factors as the changed gaseous
and chemical composition of the atmosphere, the taking of sub-
stantiated products as food and of water regenerated from urine
and condensate, and also the limitation of mobility and the
uniformity of external environment, as a result of formation of effect,
lead to marked shifts in the human organism and make further
study in a sealed cabin impossible. Investigation of the com-
position of the intestinal microflora in them shows that even
individual representatives of the intestinal microflora -- Bifid-
obacteria, Lactobacillus, and Bacillus (Escherichia) coli (Beng-
and and Tere, 1969, 1970, 1971). These changes testify to de-
struction of the normal microbial cenosis, as it is well known
that these microorganisms of a healthy intestine play an impor-
tant role in the processes of vital activity of the macroorgan-
ism (protective, vit amin-forming, enzymatic, etc).

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USSR

UDC 632.95

PTITSYNA, N. V., and BRAGINA, V. V.

"The Determination of Residual Amounts of Neorone, Galechrone and Gardona in Apples"

Trudy Vtorogo Vsesoyuznogo soveshchaniya po issledovaniyu ostatkov pestitsidov i profilaktike zagryzaniya ini produktov pitania, kormov i vneshney sredy (Works of the Second All-Union Conference on the Study of Pesticide Residues and the Prevention of Contamination of Food Products, Fodders and the Environment by Them), Tallinn, 1971, pp 194-196 (from Referativnyy Zhurnal -- Khimiya, No 10 (II), 1972, Abstract No 10K510 by T. A. Belyayeva)

Translation: To 100-200 g of crushed apples is added 300-400 ml petroleum ether; then Na_2SO_4 , evaporated and pesticides are identified using thin-layer chromatography: neorone on silica gel KCK-2, bentonite on Al_2O_3 , bentonite or Al_2O_3 ; gardona on bentonite or Al_2O_3 ; galechrone on Al_2O_3 . On Al_2O_3 chromatography is conducted in a system of n-hexane-acetone 5:1 (for galechrone, 19:0.5 is better). Development is conducted with a reagent containing a solution of 0.5 g AgNO_3 in 5 ml water, 5 ml of an aqueous solution of NH_4OH , 0.3 ml of 30% hydrogenperoxide and ~90 ml water (total volume: 100 ml).

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BRAGINSKAYA, A.G.

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6-73

XI-9. STUDY OF THE MICROHARDNESS OF THE COMPOUND $ZnSiAl_2$ AND ALLOYS BASED ON IT
Article by E. P. Bogharov, A. G. Braginskaya, A. N. Popkov, G. A. Sokhova,
Moscow; Novosibirsk; I. I. Stepanov, Po Prolomennam kosta I. Stepanov, Prolomennam
Nizovsk, Krasnodar (Pleiss, Russian, 12-17 June 1972, p 193)

A study was made of the effect of the method of obtaining $ZnSiAl_2$ crystals on the magnitude of microhardness. The advantage of the method of horizontal directional crystallization by comparison with the vertical method of horizontal crystallization was demonstrated. The microhardness of $ZnSiAl_2$ measured on large-block crystals with block dimensions of 3×5 mm is 480 kg/mm². The results of studying microstructure and the microhardness of the alloys based on $ZnSiAl_2$ demonstrated the presence of two-phase regions in the $ZnSiAl_2$ and Si and $ZnSiAl_2$ - $ZnAl_2$ sections and the region of limited solubility from the ternary compound side to 12 percent $ZnAl_2$.

BRAGINSKAYA, A. G.

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XV 6. MASS SPECTROMETRIC STUDIES OF THE HYDRATION PROCESS OF ZnCl_2
 Reported by A. L. Astimova, A. G. Braginskaya, E. P. Kochukov, A. N. Fedorov,
 L. E. Kuznetsov, Novosibirsk, III Symposium on Prostaglandin Reactions, State
 Institute of Chemistry, Novosibirsk, 12-17 June 1972, p 215

A mass spectrometric study is made of the process of thermal expansion
 of the compound ZnCl_2 , a representative of wide-zone compounds of the II-
 A series. It is demonstrated that on decomposition of ZnCl_2 in the gas
 phase over Zn , ZnO , and so on, zinc and atomic vapor occur, the molecular
 weight of the vapor and the relative values of the zinc and atomic pres-
 sures in the temperature range from 250° C to 400° C are determined. The func-
 tion $\ln p = (1/T)$ is found by the experimental data, and the partial heats
 of the decomposition process are determined for two sections of the curve. The
 thermochemical potentials and enthalpies in the investigated temperature
 range were calculated. The activation energy of the process was determined,
 and the reaction rate constant was found as a function of temperature.

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USSR

UDC 547.963.3

ZHIZHINA, G. P., VAYNSHTERN, R. S., and BRAGINSKAYA, F. I., Institute of Chemical Physics, USSR Academy of Sciences, Moscow

"Study of Injury to DNA and DNP Caused by Ultrasound"

Moscow, Doklady Akademii nauk SSSR, No 5, 1973, pp 1193-1196

Abstract: Exposure of DNA to ultrasound for 1 to 10 minutes decreased the intensity of several absorption bands in the infrared spectra of the acid and resulted in the appearance of a new, unresolved band at 1190 cm^{-1} . It also decreased the intensity of the 1650 and 1590 cm^{-1} bands in the region of the oscillations of the double bonds of the bases as well as the intensity of the 1010 cm^{-1} and 960 cm^{-1} bands in the region of the oscillations of the sugar-phosphate skeleton of DNA. Deamination of the bases following slight prolongation of sonication did not occur because the intensities of the bands of oscillations of the amino groups of the bases (3350 , 3200 , and 1605 cm^{-1}) remained unchanged. Exposure of DNP to ultrasound decreased the intensity of several bands of the protein component: 3300 , 3200 , 2940 , 1450 , 1550 , and 1400 cm^{-1} . The authors conclude that DNA in the DNP complex is highly resistant and that ultrasonic degradation of the complex begins only after partial injury to the protein coat of DNP.

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1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--QUENCHING OF ULTRASONIC WAVES IN AQUEOUS SOLUTIONS OF NUCLEIC ACIDS
-U-
AUTHOR--(03)-ELPINER, I.E., SADYKHOVA, S.KH., BRAGINSKAYA, F.I.
COUNTRY OF INFO--USSR
SOURCE--BIOFIZIKA 1970, 15(1), 26-30
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--NUCLEIC ACID, AQUEOUS SOLUTION, ULTRASOUND ABSORPTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0710 STEP NO--UR/0217/70/015/001/0026/0030
CIRC ACCESSION NO--AP0119617
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION OF ULTRASONIC ENERGY BY NATIVE AND DENATURED NUCLEIC ACIDS (I) WAS STUDIED BY MEANS OF A 12-68 MHZ GENERATOR. THE DENATURATION CAUSED BY THE ACTION OF HCHO OR NH SUB2 OH ON I, AND LIMITED TO CHANGES OF THE SECONDARY STRUCTURE OF I, RESULTED IN AN INCREASE OF THE ABSORPTION OF ULTRASONIC WAVES. RUPTURE OF THE POLYMER CHAINS IN I CAUSED BY THE ACTION OF HIGH INTENSITY ULTRASONIC WAVES, UREA, OR HYDROLYZING AGENTS RESULTED IN A DECREASE OF THE ABSORPTION OF ULTRASONIC ENERGY IN THE FREQUENCY RANGE EXAMD.
FACILITY: INST. CHEM. PHYS., MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--USE OF ULTRASONIC WAVES TO STUDY THE COMPLEXING OF NUCLEIC ACIDS
WITH POLYANIONS -U-
AUTHOR--(03)-ELPINER, I.YE., BRAGINSKAYA, F.I., SADYKHOVA, S.KH.
COUNTRY OF INFO--USSR
SOURCE--BIOFIZIKA 1970, 15(2), 274-7 (RUSS)
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--YEAST, RNA, SODIUM COMPOUND, PHOSPHORUS COMPOUND, CHEMICAL
REACTION, ULTRASONIC IRRADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0284 STEP NO--UR/0217/70/015/002/0274/0277
CIRC ACCESSION NO--AP0135780

2/2 016
CIRC ACCESSION NO--AP0135780

UNCLASSIFIED

PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTERACTIONS BETWEEN YEAST RNA AND THE POLYPHOSPHATES (NAP0 SUB3) SUB75 AND (NAP0 SUB3) SUB3 WERE STUDIED BY MEASURING QUENCHING OF ULTRASONIC WAVES. QUENCHING WAS MEASURED ON AN IMPULSE DEVICE IN THE FREQUENCY RANGE 12-68 KHZ. METHACHROMASIA WITH TOLUIDINE BLUE WAS ALSO EMPLOYED. THE ABSORPTION MAX. OF TOLUIDINE BLUE IS DISPLACED TOWARD LOWER WAVELENGTHS (600 AND 540 M MU) IN THE PRESENCE OF RNA AND POLYPHOSPHATE, RESP. THE LINEAR (NAP0 SUB3) SUB75 IS APPARENTLY BOUND BY NONHELICAL PORTIONS OF THE RNA MOL., WHICH THEN ACQUIRES DOUBLE STRANDED PROPERTIES. (NAP0 SUB3) SUB3, ON THE OTHER HAND, DOES NOT CHANGE ITS METACHROMATIC REACTION WITH THE DYE UPON ADDN. TO RNA. METACHROMATIC DATA ARE IN GOOD AGREEMENT WITH RESULTS OF STUDIES ON ACOUSTIC PARAMETERS OF POLYPHOSPHATES DURING INTERACTION WITH RNA. SONICATION OF RNA UNDER CERTAIN CONDITIONS (IN H₂O, 2 HR, FREQUENCY 750 KHZ, INTENSITY 10-12 W-CM²) RESULTS IN RUPTURE OF RNA MOLS. ALONG NONHELICAL REGIONS. AS A RESULT, THE SONICATED RNA LOSES SOME OF ITS ABILITY TO INTERACT WITH (NAP0 SUB3) SUB75. FACILITY: INST. CHEM. PHYS., MOSCOW, USSR.

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B
Biochemistry

USSR

BRAGINSKAYA, F.I., SADIKOVA, S.KH., and EL'PINER, I.YE., Institute of Chemical Physics, Academy of Sciences USSR

"Study Formation of Complexes of Nucleic Acids With Polyaniions by Means of Ultrasound Waves"

Moscow, Biofizika, Vol 15, No 2, Mar/Apr 70, pp 274-276

Abstract: For the first time, determination of the attenuation of ultrasound waves was used to study the interaction of nucleic acids with polyphosphates [yeast RNA, $(\text{NaPO}_3)_{75}$, and $(\text{NaPO}_3)_3$]. Attenuation of ultrasound was measured with an impulse device in a frequency range of 12-68 megacycles per second. Along with the study of acoustic parameters of polymers, the method of metachromasia with toluidine blue was used. In the presence of RNA or polyphosphate, the absorption maximum of toluidine blue is displaced toward shorter wavelengths (600 millimicrons and 540 millimicrons, respectively), while in the presence of the complex it is shifted toward longer wavelengths (620 millimicrons). The linear polyphosphate $(\text{NaPO}_3)_{75}$ apparently becomes attached to the nonhelical portions of the RNA molecule, and the latter acquires the properties of a double helical polymer. Unlike the $(\text{NaPO}_3)_{75}$, when the $(\text{NaPO}_3)_3$ is added, it does not change the metachromatic reaction of RNA with the dye.

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USSR

BRAGINSKAYA, F.I., et al, Biofizika, Vol 15, No 2, Mar/Apr 70, pp 274-276

The metachromatic data agree with the results obtained in studies of the acoustic parameters of polyphosphates during their interaction with RNA. Under certain conditions (in hydrogen, exposure of 2 hours, frequency of 750 kilocycles/sec, intensity of 10-12 watts/cm²), ultrasound treatment of RNA results in a breakage of the RNA molecules in their nonhelical regions. As a consequence, the treated RNA loses some of its ability to interact with (NaPO₃)₇₅.

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Immunology

USSR

ADILOV, D. A., AGZAMOV, B. M., and BRAGINSKAYA, G. V., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases

"The Use of Anthraxin in the Diagnosis of Anthrax"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, 1971, pp 64-66

Abstract: Immuno-allergic tests for anthrax were performed on 226 individuals by means of intradermal injections of an anthraxin solution and appropriate control tests. The anthraxin reaction was positive in 85 out of 100 patients with anthrax, while bacteriological tests were positive in only 49 of these patients. Of 58 individuals who had had anthrax 2 to 25 years ago, the anthraxin test was positive in 55. Among family members with exposure to anthrax, six out of 68 displayed positive anthraxin reaction, and subsequently collected anamnestic data revealed that all six had had a typical, atypical, or mild form of the disease in the past, without proper diagnosis. It is concluded that the anthraxin tests, which yield correct positive results twice as often as bacteriological tests and are easy to perform, should be applied in cases of suspected anthrax in order to ensure proper treatment and prevent an epidemic.

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USSR

UDC 616.912-085.371-039.71-053.2-06

BRAGINSKAYA, V. P., Doctor of Medical Sciences and SOKOLOVA, A. F., Candidate of Medical Sciences, Department of Infectious Diseases, Institute of Pediatrics, Academy of Medical Sciences USSR, Moscow

"Complications Following Vaccination of Children Against Smallpox"

Moscow, Sovetskaya Meditsina, No 6, Jun 71, pp 121-125

Abstract: A study during 3 $\frac{1}{2}$ yrs of 190 cases of complications following vaccination of children against smallpox indicated that the allergy component plays a considerable role in these complications. A pre-existing altered reactivity of the organism changes protective physiological reactions that accompany immunogenesis into pathological reactions, with the result that acute allergic processes are released. In the therapy of the complications, hyperimmune specific human anti-smallpox gamma-globulin with a 1:4000 titer of virus-neutralizing antibodies and titrated gamma-globulin with an antibody titer of at least 1:2000 were effective. In some cases, particularly those in which skin lesions developed, administration of methisazone (a drug of the thiosemicarbasone type, which inhibits the action of viruses of the smallpox group) yielded good results. In acute complications involving the nervous

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BRAGINSKAYA, V. P., and SOKOLOVA, A. F., Sovetskaya Meditsina, No 6, Jun 71, pp 121-125

system, such as post-vaccination encephalitis, specific gamma-globulin, antibiotics, corticosteroids, and drugs with antihistamine activity were applied in combination with intensive measures to bring about dehydration and relieve spasms. Care should be exercised to prevent complications when contraindications to vaccination such as an altered allergic reactivity are present or children older than 3 yrs are vaccinated, who are particularly susceptible to post-vaccination encephalitis. In such cases preliminary administration of vaccine inactivated by gamma-irradiation followed by administration of live vaccine was found to be advantageous.

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USSR

UDC 616.912-085.371-039.71-053.2-06

BRAGINSKAYA, V. P. Doctor of Medical Sciences and SOKOLOVA, A. F., Candidate of Medical Sciences, Department of Infectious Diseases, Institute of Pediatrics, Academy of Medical Sciences USSR, Moscow

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BRAGINSKAYA, V. P., and SOKOLOVA, A. F., Sovetskaya Meditsina, No 6, Jun 71, pp 121-125

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- 64 -

1/2 036 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EXPERIMENTAL STUDY OF THE INTEGRAL MAGNETIC VISCOSITY DIELECTRICS
-U-
AUTHOR--(03)-BRAGINSKIY, B.V., BRANDT, N.B., OSIKA, V.I.
COUNTRY OF INFO--USSR *B*
SOURCE--FIZ. TVERD. TELA 1970, 12(2) 351-6
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC VISCOSITY, DIELECTRICS, PENDULUM MECHANICS, QUARTZ,
CORUNDUM, TEFLON, FERROMAGNETISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FILE/FRAME--1980/0094 STEP NO--UR/0191/70/012/002/0351/0056
CIRC ACCESSION NO--AP0049386
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0048386

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD WAS DEVELOPED FOR MEASURING MAGNETIC VISCOSITY OF DIELECS., BASED ON USE OF A STRONG MECH. SYSTEM (TWISTING PENDULUM). THE DEPENDENCES OBTAINED OF THE MECH. RELAXATION TIME ON THE INTENSITY OF THE MAGNETIC FIELD FOR QUARTZ, CORUNDUM, AND TEFLON ARE GIVEN. FOR MOLTEN QUARTZ, MEASUREMENTS WERE CARRIED OUT AT 10-1200DEGREE SK AND IN MAGNETIC FIELDS SMALLER THAN OR EQUAL TO 23 KOE. ANOMALOUSLY LONG RELAXATION TIMES WERE OBSD. IN THE INVESTIGATED SUBSTANCES. THIS IS APPARENTLY RELATED TO THE PRESENCE IN THE SPECIMENS OF SMALL FERROMAGNETIC IMPURITIES IN THE FORM OF DOMAINS. THE METHOD USED ALLOWS ONE TO OBSERVE FERROMAGNETIC IMPURITIES IN AMTS. OF 10 PRIME NEGATIVE8 OF THE SPECIMEN VOL.

BRAGINSKIY, L.N.

HYDROBIOLOGY

HYDROBIOLOGICAL ASPECTS OF THE PROBLEM OF DETERMINING THE PERMISSIBLE
CONCENTRATION LIMIT OF TOXIC SUBSTANCES IN WATER

UDC 502.7:625.80

USSR

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Series: JPRS 46134
25 FEB 74

[Article by L.N. Braginskiy, Ukrainian SSR Academy of Sciences, Institute
of Hydrobiology, Kiev; Moscow, Vkhutye Rezhimy, Krasnaya, No 4, 1973, pp 114-
140]

The new problems posed in connection with the protection of water re-
sources make it necessary to analyze toxic factors of water media on the
processes determining the quality of water in water sources. In these pro-
cesses, particularly in water bodies with slow or controlled runoff (lakes,
ponds, and water reservoirs), the most responsible role is played by the
combined vital activities of hydrobiota. Maintaining water quality in
water sources at a level ensuring the possibility of their complex utiliza-
tion is determined considerably by the degree to which the biological pro-
cesses maintaining a stable state (homeostasis) of aquatic ecological sys-
tems are preserved or disturbed under the action of pollutants.

The interaction of toxic factors, and that of productive and destruc-
tive processes in aquatic ecosystem and the closely connected self-purifi-
cation processes have not yet been studied sufficiently well in spite of the
fact that this is the focal point of further development of hydrobiology with
respect to the problem of pure water. Therefore, the theses proposed here
are not claimed to be complete and are only an outline of the most important
long-range research problems whose solution will make it possible to include
hydrobiological criteria in the system of methods for determining maximum
permissible concentrations of toxic substances.

The effects of toxic pollutants on aquatic ecosystems are complex
and varied, and affect various ecological zones of water bodies.

In a body of water, the first important component of the aquatic life
to get into contact with pollutants is the phytoplankton.

Functionally, phytoplankton are the main source of energy and or-
ganic substances in aquatic ecosystems. They are the main suppliers of

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USSR

UDC 541.6+541.15

KARPOV, V. L., FINKEL', E. E., BERLYANT, S. M., and BRAGINSKIY, R. P.

"Radiation Modification of Polyolefines"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev, Vol 18, No 3, 1973, pp 270-278

Abstract: A review with 87 references analyzing the effect of radiation on the changes in physico-mechanical and electric properties of polyethylene and other polyolefines as well as the thermal stabilization of the radiation modified polyolefines. The reported data suggest that radiation modification of polyethylene is one of the most promising radio-chemical processes. The polyethylene modified by radiation exhibits several novel qualities in comparison to the nonirradiated one, expanding considerably its applicability. The properties and areas of application of the products manufactured from radiation modified polyethylene have been noted.

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USSR

UDC 678.742.2:66.018.88/.01:53

BRAGINSKIY, R. P., PARFENOVA, D. S., TROITSKIY, I. D., FINKEL', E. E.,
and CHERVONISEVA, G. M.

"Radiation Modification of Self-Extinguishing Polyethylene Compositions"

Moscow, Plasticheskiye Massy, No 1, Jan 72, pp 15-18

Abstract: The authors consider possibilities for radiation modification of self-extinguishing compositions based on low-density polyethylene to improve thermal stability and physical and mechanical characteristics at high operating temperatures. The self-quenching composition studied was made up of 77.0 percent P2015KU polyethylene, 11.3 percent chloroparaffin 70, and 11.7 percent Sb_2O_3 . The control specimens were unmodified P2015KU polyethylene.

Pressed plates about 0.3 mm thick were exposed to Co^{60} gamma radiation at room temperature in helium to absorbed doses of 1-500 Mrad. The gel fraction content was then determined. Deformation characteristics were measured on special specimens. The thermomechanical characteristics and quenching properties were also studied. It was found that an optimum dose of about 15 Mrad considerably improves the deformation characteristics of the self-extinguishing composition. Thermomechanical tests of specimens which had absorbed this dose showed that shape stability is adequate for use of
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USSR

BRAGINSKIY, R. P., et al., *Plasticheskiye Massy*, No 1, Jan 72, pp 15-18

finished articles at 100°C, which extends the region of application of this material. The authors thank L. Ye. Sokolova, L. Khokhlova and N. K. Kozlova for assistance in the experimental studies. Four figures, bibliography of twenty-four titles.

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1/2 015
TITLE--FLUCTUATION SPECTRUM OF THE EARTH'S HYDROMAGNETIC DYNAMO -U-
AUTHOR--BRAGINSKIY, S.I. *B*
COUNTRY OF INFO--USSR
SOURCE--GEOMAGNETISM I AERONOMIJA, VO. 10, NO. 2, 1970. P 221-233
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--GEOMAGNETIC FIELD, EARTH CORE, ELECTRIC CONDUCTIVITY,
TRAVELING WAVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0134
CIRC ACCESSION NO--AP0119130
STEP NO--UR/0203/70/010/002/0221/0233
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119130

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE MECHANISMS OF THE VARIOUS FLUCTUATION TYPES OF THE EARTH'S HYDROMAGNETIC DYNAMO, ON THE BASIS OF AN ANALYSIS OF UNSTEADY KINEMATIC MODELS OF THE HYDROMAGNETIC DYNAMO. RELATIONS BETWEEN THESE MECHANISMS AND SECULAR GEOMAGNETIC FIELD VARIATIONS WITH VARIOUS CHARACTERISTIC TIMES ARE ESTABLISHED. THE ELECTRICAL CONDUCTIVITY OF THE EARTH'S CORE IS EVALUATED FROM THE OBSERVED PERIOD OF THE PRINCIPAL GEOMAGNETIC FIELD FLUCTUATIONS, AND THE TRAVELING WAVES. POSSIBLE RELATIONS BETWEEN THE VARIOUS EFFECTS OBSERVED AND THE DYNAMO STRUCTURE ARE EXAMINED. THE IMPORTANCE OF STUDYING THE DYNAMO FLUCTUATIONS AND THE CORRESPONDING VARIATIONS OF THE GEOMAGNETIC FIELD IN THE DEVELOPMENT OF A THEORY OF THE EARTH'S HYDROMAGNETIC DYNAMO IS NOTED.

UNCLASSIFIED

USSR

UDC 536.46 + 662.222.2

BRAGINSKIY, V. I., BAKIMAN, N. N., Moscow

"The Anomalous Dependence of Combustion Rate on Pressure for Mixtures of Ammonium Perchlorate with Certain Organic Fuels"

Fizika Goreniya i Vzryva, No 1, Mar 71, pp 57-61.

ABSTRACT: A study was made of the dependence of combustion rate u on pressure p for model mixtures of APC of about 5 μ particle size with a number of organic acids with various ratios between components. A series of experiments was also performed with large-particle APC (90-250 μ fractions) with adipic and succinic acids. The acids were ranged in sequence of increasing maximum combustion rate. The higher the pressure, the lower the percentage of fuel at which the maximum combustion rate is achieved for each mixture. With sufficiently high fuel content, a plateau was observed on the curves of $u(p)$, or sectors were observed where the rate of combustion decreased with increasing pressure. An explanation is suggested for the experimental data, based on concepts of the zone of influence.

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